

# ELAP PD/PE

## INCREMENTAL LINEAR TRANSDUCERS

- High reading resolution (up to 0.005 mm) • Easy mounting method • High protection degree (IP65)

Accurate, strong, easy to mount, and weatherproof, transducers series PD and PE are the ideal solution when you need to measure thickness or control linear displacement on any kind of industrial machine. There are three versions available, each one with or without zero pulse:

- PD100: reading resolution 0.01 mm • PD500: reading resolution 0.005 mm • PE050: reading resolution 0.05 mm

**TYPICAL APPLICATIONS:** • Measuring thickness (of glass panes, wood plates, paper sheets) • Control of strokes length • wood-working machinery, glass/marble-working, sheet, plastics, paper machinery • Hydraulic and pneumatic motion systems

COMPLYING WITH STANDARDS

### GENERAL

#### SPECIFICATIONS

	PD100	PD500	PE050
Operating principle	Optoelectronic reading on glass graduated scale 2 mm thick		Optoelectronic reading on polyester film graduated scale 0.18 mm thick
Grating pitch	20 + 20 micron	10 + 10 micron	100 + 100 micron
Grating accuracy	±3 micron/m		±0.01 mm
Reading resolution	0.01 mm	0.005 mm	0.05 mm
Reference pulses	Standard: 1 at mid-stroke or 1 each 25 mm . On request: placed according to the customer's requirements		
Measuring element material	Floatglass		Film polyester
Thermal expansion of the measuring element	8 x 10 <sup>-6</sup> /°C		18 x 10 <sup>-6</sup> /°C

### MECHANICAL

#### SPECIFICATIONS

	PD100	PD500	PE050
Strokes	60 to 990 mm		
Protection degree	IP64 - IP 65 for the version with O-ring		
Max speed	60 m/min.	120 m/min.	
Max acceleration	40 m/sec <sup>2</sup>		
Reference search max speed	12 m/min.	24 m/min.	
Progress strength	1 ÷ 3 N		
Case	Anodised aluminium - square dimensions 31x31 mm		
Stem	Stainless steel diameter 8 mm		
Fixing	Metal clamping feet placed freely along the body or ball joints at the ends		
Operating temperature	0 ÷ 50° C		
Stocking temperature	-20 ÷ +70° C		
Dimensions	See the drawing		

### ELECTRICAL

#### SPECIFICATIONS

	PD100	PD500	PE050
Lighting signal source	LED		
Supply	10 ÷ 24 Vdc - 5 Vdc ± 5% protection against polarity reversal		
Current consumption	max 50 mA - 90 mA for line driver output		
Output signals	2 square waves, 90 ± 15 degree out of phase or 2 sinusoidal waves 90 ± 15 degree out of phase 1V <sub>PP</sub>		2 square waves, 90 ± 15 degree out of phase
	Zero signal 90°±15°		
Electronic output	push-pull (max. 50 mA), open collector NPN (max. 50 mA 30 V), line driver (5 o 10/24 Vdc) Protection against short circuits		
Electrical connections	By connector		

### SPECIAL VERSIONS

- PRESSURIZED VERSION (IP 67) with connection for compressed air
- version with cable connection
- version with amplifier
- CUSTOMIZED VERSIONS ON REQUEST

### CONNECTOR SIGNAL

- PUSH PULL OUTPUT NPN OPEN COLLECTOR OUTPUT
- LINE DRIVER OUTPUT



STROKE	X SERIES PD	Y SERIES PE	N° CLAMPINGS
60	153	137	3
120	213	197	3
170	263	247	3
200	293	277	3
220	313	297	3
255	348	332	4
280	372	357	4
360	512	497	4
380	532	517	4
440	592	577	5
520	672	657	5
580	732	717	5
650	813	787	6
750	913	887	7
990	1153	1127	7

VARIATIONS ADMITTED WITHOUT NOTICE REV. 02/03

### DIMENSIONS PD/PE SERIES

